

Internet Appendix
“The Business of City Hall”
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APPENDIX A. DATA COLLECTION

If a city has data issues, the following provides details about the issues and the corrections.

Atlanta

- In 2006, Atlanta changed their fiscal year-end from June to December. Because many expenses and revenues were only recognized in the second half of the year, multiplying the first half of the year by two would produce erroneous financial statements. Therefore, I drop the 2006 observation for Atlanta.
- CAFRs classify business tax and other taxes as miscellaneous starting in 2012. Therefore, I code business tax as zero from 2003 to 2011, and add the listed business tax to miscellaneous taxes starting in 2012.

Albuquerque

- Albuquerque restated government capital assets in 2006. Therefore, I apply these restatements to 2005.

Baltimore

- Baltimore does not separately identify entertainment and utility taxes from 2003 to 2005. Therefore, I record these entries as missing, though the total taxes are complete.

Boston

- The 2009 CAFR has typos. There are zeros for total primary government instead of sums.
- CAFRs list state and district assessments for education expenses as miscellaneous expenses from 2003 to 2007. I recode these as education.
- CAFRs change intergovernmental transfers to public safety expenses in 2008. This reflects that the city of Boston pays the county a fee for public safety. I recode the intergovernmental transfers from 2003 to 2007 as public safety.

Chicago

- Entertainment taxes are included in miscellaneous taxes in the CAFRs from 2003 to 2008. I recode the entertainment tax for this years using the information provided in the notes to the financial statements in the CAFRs.

Dallas

- The CAFRs report a negative public safety expense in 2018. This is because the regular expenses were offset by negative pension expense of \$1.2 billion, which lead to a negative expense of \$350 million. To correct this, I add the \$1.2 billion back to public safety in 2018.
- In 2010, Dallas received a large capital grant of \$332 million for the Dallas Center for Performing Arts, funded by private donations. This seems like an erroneous amount for capital grants and contributions in culture and recreation, but it is correct.

Denver

- Business, automobile, entertainment, and utility taxes are included in miscellaneous taxes in the CAFRs for 2003 to 2005, but separated afterwards. I recoded these tax amounts for 2003 to 2005 using the fraction of each type of tax in the 2006 CAFR.

El Paso

- Before 2017, entertainment taxes were recorded as sales taxes in the CAFRs. For consistency, I code entertainment taxes as sales taxes in 2017 and 2018.

Fort Worth

- Following GASB Bo. 68, CAFRs include pension expenses for public safety in 2015–2018, causing a large jump. I decrease the safety expenses by the amount of the new pension expense in 2015–2018.
- Note: Health costs fall to almost nothing in 2009 because the city transfered public health to the county government. No change needed.
- Before 2010, entertainment and sales taxes were included in miscellaneous. I impute their values for 2003 to 2010 using their fraction of the total in 2011.

Fresno

- Development activities fell to zero in 2013 because redevelopment agencies were dissolved by state law in 2011.

Houston

- State level pension change in 2017 caused pension expenses for public safety to fall by \$1.9 billion in 2017. I add back this amount for 2017 to maintain consistency.

Jacksonville

- Public safety and administrative expenses spike reported in CAFRs in 2017 and 2018 caused by GASB No. 68 requirements. I subtract the \$162.5 million in 2017 plus the inflation-adjusted 2018 value to public safety. I subtract \$59,700 from administrative in 2017 and its inflation-adjusted amount for 2018.
- Introduced a business tax in 2010.

Kansas City

- Building department expenses go to zero in 2008 because the building codes department was reclassified into a different function, however, the CAFR does not give enough detail to correct this reclassification.

Long Beach

- In the CAFRs, business taxes were included in miscellaneous taxes from 2003 to 2010, but separated in 2011. I impute business taxes for 2003 to 2010 using their average fraction of total taxes from 2011 to 2018.

Los Angeles

- In the 2003–2005 CAFRs, entertainment and automobile tax are included in miscellaneous taxes, but separated starting in 2006. I impute their values for 2003 to 2005 using later years.

Louisville

- Note: Development expenses jump in 2016 because of a large multi-use development called the Omni Project.
- Note: Utility expenses fall to zero in 2012 because the solid waster utility was sold to a private company.

Memphis

- Before 2007, the CAFRs do not separate business, automobile, income, property, and utility taxes. Therefore, I drop the observations for Memphis from 2003 to 2006.

Mesa

- Note: Mesa introduced a property tax in 2010. This is the first property tax the City has collected in over 65 years and was a result of a voter-approved initiative during 2008. The property tax revenue is restricted to pay for the debt service requirements for general obligation bonds.
- In 2003 to 2006 CAFRS, sales tax is reported as miscellaneous. Using notes to the statements in the CAFRs, I separate sales tax for years 2003 to 2006.

Milwaukee

- Milwaukee does not separate any of its tax categories in the CAFRs from 2003 to 2018. The CAFRs do not provide any information how to separate total taxes into individual tax types. Therefore, I exclude Milwaukee from the sample entirely.

Nashville

- All taxes are aggregated before 2008. Therefore, I drop the observations 2003 to 2007 for Nashville from the sample.

New York

- GASB No. 45 creates a big spike in expenses caused by costs of other pension and employee benefits (OPEB). Therefore, for consistency, I impute the fraction of total OPEB expenses accounted by each functional area and subtract them from the expenses in 2006.
- Entertainment taxes are included in miscellaneous taxes in the CAFRs from 2003 to 2009. Using the notes in the CAFRs, I separate these taxes from 2003 to 2009.

Oklahoma City

- In 2013, the city reclassified business-type activities as a component unit.
- Utility taxes in 2005–2007 are included in miscellaneous taxes in the CAFRs. I impute their individual values for 2005–2007 using CAFRs from later years.

Phoenix

- In 2004, the city reclassified public safety expenses with criminal justice. I recode the 2003 expenses to be consistent with the following years.

Portland

- I could not obtain CAFRs from 2003, 2005-2007.
- In 2015 CAFR, pension liability is added to expenses. The CAFR does not provide enough information to subtract this amount, so I leave it as reported in the CAFR.

Sacramento

- Automobile tax is recorded as property tax in 2003 and 2004. I use the 2005 CAFR to impute the automobile tax for 2003 and 2004.
- The city marina is reclassified from a port to culture and recreation in 2014. I reclassify the marina as culture and recreation in all years.
- Business, entertainment, and sales taxes are combined into miscellaneous tax and not reported separately from 2003 to 2014. There is not sufficient information in the CAFRs to impute their values. Therefore, for consistency, I combine these taxes into miscellaneous taxes for all years through 2018.

San Antonio

- Note: Education expenses spike up in 2015–2018 because the city opened two new schools.

San Diego

- For 2004 only, sales taxes were combined with unrestricted grants and contributions in the CAFR. I impute its value and recode sales tax separately.
- Entertainment tax is combined with miscellaneous taxes in the 2003 CAFR. I impute its value to separate it.

San Francisco

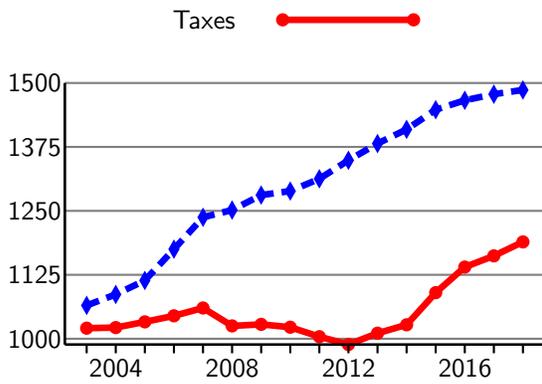
- Entertainment, sales, and utility taxes are combined with miscellaneous taxes in CAFRs for 2003 to 2008. Automobile tax is combined with miscellaneous taxes in the 2003 to 2013 CAFRs. I impute their separate values.

Tucson

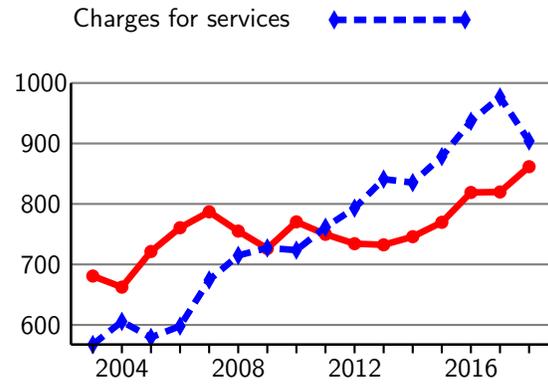
- Neighborhood is combined with public safety in all CAFRs. I code the combined entries as public safety.

Virginia Beach

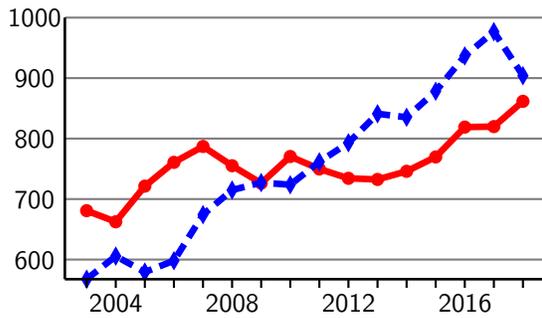
- CAFRs in 2003 to 2005 combine business, automobile, entertainment, sales, and utility taxes. I use data from later CAFRs to impute their separate values.



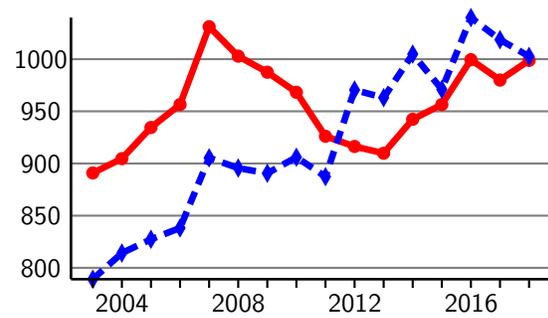
(A) Inflation-adjusted millions of 2018 dollars
Average City



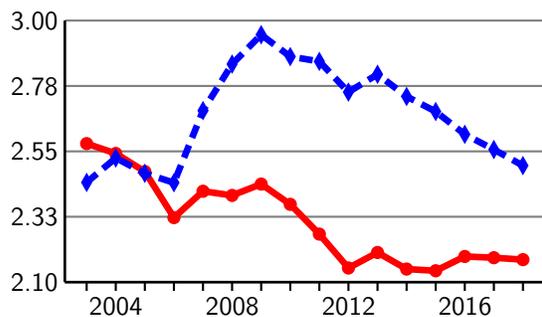
(B) Inflation-adjusted millions of 2018 dollars
Median City



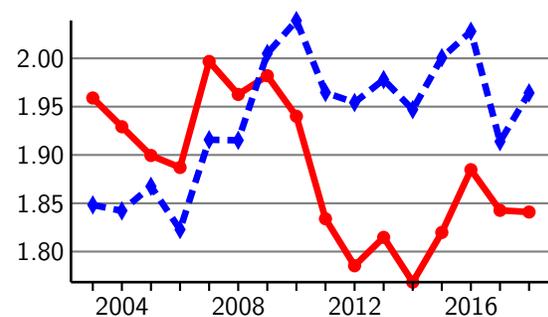
(C) Inflation-adjusted per capita 2018 dollars
Average City



(D) Inflation-adjusted per capita 2018 dollars
Median City



(E) Per dollar of personal income (%)
Average City



(F) Per dollar of personal income (%)
Median City

INTERNET APPENDIX FIGURE I
Taxes and Charges for Services Excluding City-Counties

INTERNET APPENDIX TABLE I
 MAJOR EXPENSES, CHARGES, AND GENERAL REVENUES:
 MILLIONS OF 2018 INFLATION-ADJUSTED DOLLARS

	Mean	Std. Dev.	5th	25th	50th	75th	95th
<i>Expenses</i>							
Public safety	1,183.3	2,764.6	228.5	350.9	538.9	818.2	3,055.1
Education	998.9	4,231.2	0.0	0.0	0.0	6.1	3,187.2
Health	795.0	2,953.9	0.0	0.0	65.7	186.2	3,592.1
Utilities	754.6	1,029.2	61.5	198.9	358.3	888.1	3,345.8
Administration	443.6	899.8	37.4	87.9	154.0	321.7	2,492.4
Public works	357.1	456.3	0.0	141.7	209.5	357.9	1,315.2
Ports	208.2	362.9	0.0	0.0	31.1	212.2	1,057.7
Total	5,462.6	12,500.0	822.4	1,266.4	2,369.0	4,068.1	13,500.0
<i>Charges for services (CFS)</i>							
Public safety	68.5	91.2	5.7	24.0	37.0	74.2	300.4
Education	13.9	63.8	0.0	0.0	0.0	0.0	41.7
Health	50.0	163.1	0.0	0.0	3.7	19.5	291.6
Utilities	718.8	957.0	51.5	210.7	378.3	784.2	2,127.0
Administration	108.4	198.6	3.3	18.6	50.2	112.9	421.9
Public works	103.9	183.5	0.0	16.6	45.8	101.2	417.5
Ports	198.7	358.3	0.0	0.0	25.5	223.8	938.2
Total	1,444.9	1,604.7	259.5	426.7	910.2	1,964.2	4,383.0
<i>General Revenues</i>							
Taxes							
Property	1,064.1	3,194.7	46.8	161.9	413.6	746.6	2,108.2
Income	405.1	1,681.7	0.0	0.0	0.0	0.0	1,822.0
Sales	399.4	1,193.2	0.0	0.0	167.1	293.9	1,110.8
Business	2,506.6	7,439.7	296.0	522.7	872.8	1,481.9	5,346.3
Total	2,838.6	7,846.8	349.7	605.8	1,000.7	1,743.2	6,479.9
CFS + Taxes	3,951.5	8,266.3	660.3	1,070.2	1,944.8	3,163.9	11,600.0
Δ net position	50.4	1,108.6	-499.2	-17.4	104.2	249.7	706.3

INTERNET APPENDIX TABLE II
CITY REVENUES AND EXPENSES: PER CAPITA

Function	Expenses	Charges for Services	Operating grants and contributions	Capital grants and contributions	Net (expense) revenues
Public safety	837.70	63.82	57.50	2.57	-713.82
	705.07	55.11	19.83	0.02	-608.61
Education	518.58	6.43	168.12	4.68	-339.35
	0.00	0.00	0.00	0.00	0.00
Health	445.28	46.51	218.00	2.71	-178.05
	93.74	5.87	27.89	0.00	-25.45
Utilities	676.40	697.12	4.89	37.92	63.53
	482.06	490.51	0.33	19.43	55.50
Administration	322.07	92.08	38.38	5.06	-186.56
	203.16	68.14	10.14	0.11	-107.67
Public works	348.35	90.47	49.63	74.97	-133.27
	270.24	54.62	27.19	42.17	-103.12
Ports	203.04	192.55	4.29	37.16	30.95
	50.97	39.65	0.00	6.77	0.00
Culture and recreation	187.20	42.72	14.83	11.10	-118.55
	168.20	33.79	4.79	2.84	-112.90
Neighborhood	125.82	22.54	51.95	7.15	-44.17
	58.02	4.36	15.73	0.00	-3.87
Development	128.55	35.24	41.95	9.73	-41.63
	59.64	14.32	11.61	0.00	-5.68
Miscellaneous	137.58	114.07	4.30	4.49	-14.72
	0.00	0.00	0.00	0.00	0.00
Interest paid	105.59	0.01	0.11	0.12	-105.35
	75.13	0.00	0.00	0.00	-74.63
Total	4,037.82	1,403.85	654.93	197.89	-1,781.14
	3,173.73	942.16	239.52	147.25	-1,001.51

The upper number in each cell is the average and the lower number is the median. Values are in 2018 inflation-adjusted dollars.

INTERNET APPENDIX TABLE III
CITY REVENUES AND EXPENSES: PER PERSONAL INCOME (%)

Function	Expenses	Charges for Services	Operating grants and contributions	Capital grants and contributions	Net (expense) revenues
Public safety	1.591	0.123	0.100	0.006	-1.362
	1.429	0.109	0.041	0.000	-1.235
Education	0.929	0.012	0.301	0.008	-0.608
	0.000	0.000	0.000	0.000	0.000
Health	0.727	0.062	0.374	0.005	-0.286
	0.182	0.012	0.059	0.000	-0.052
Utilities	1.349	1.393	0.010	0.077	0.131
	1.002	1.045	0.001	0.040	0.117
Administration	0.604	0.180	0.072	0.010	-0.342
	0.403	0.127	0.019	0.000	-0.220
Public works	0.638	0.161	0.097	0.141	-0.239
	0.538	0.112	0.049	0.084	-0.198
Ports	0.365	0.348	0.008	0.075	0.065
	0.119	0.107	0.000	0.012	0.000
Culture and recreation	0.357	0.081	0.029	0.021	-0.225
	0.349	0.072	0.009	0.005	-0.224
Neighborhood	0.213	0.040	0.085	0.016	-0.072
	0.111	0.011	0.030	0.000	-0.008
Development	0.246	0.067	0.083	0.021	-0.073
	0.140	0.029	0.022	0.000	-0.011
Miscellaneous	0.281	0.235	0.008	0.010	-0.028
	0.000	0.000	0.000	0.000	0.000
Interest paid	0.199	0.000	0.000	0.000	-0.199
	0.154	0.000	0.000	0.000	-0.154
Total	7.502	2.703	1.169	0.391	-3.239
	6.122	1.955	0.490	0.301	-2.087

The upper number in each cell is the average and the lower number is the median. All numbers are percentages.

INTERNET APPENDIX TABLE IV
CITY REVENUES AND EXPENSES: FRACTION OF TOTAL REVENUES AND EXPENSES (%)

Function	Expenses	Charges for Services	Operating grants and contributions	Capital grants and contributions	Net (expense) revenues
Public safety	24.93	6.69	12.28	1.73	60.87
	24.62	5.09	10.26	0.01	57.31
Education	7.17	0.82	9.61	2.42	7.95
	0.00	0.00	0.00	0.00	0.00
Health	5.51	2.33	16.91	1.67	4.35
	3.00	0.47	11.61	0.00	2.12
Utilities	20.40	49.80	2.25	19.78	-9.38
	20.08	54.03	0.10	12.96	-5.25
Administration	8.12	8.18	10.61	3.48	11.01
	7.08	5.33	3.12	0.07	9.46
Public works	9.88	7.56	15.93	37.33	6.05
	8.33	4.72	9.01	34.35	6.98
Ports	5.33	11.31	1.04	15.74	-5.93
	2.47	3.49	0.00	4.61	0.00
Culture and recreation	5.86	3.63	5.22	5.95	10.95
	5.33	2.72	1.77	2.00	8.82
Neighborhood	3.46	2.02	13.27	4.56	3.41
	1.78	0.54	2.51	0	0.27
Development	3.41	2.91	11.18	5.01	2.04
	2.47	1.23	2.18	0.00	0.51
Miscellaneous	3.02	4.72	1.40	2.10	0.72
	0.00	0.00	0.00	0.00	0.00
Interest paid	2.86	0.00	0.02	0.06	7.93
	2.59	0.00	0.00	0.00	6.67

The upper number in each cell is the average and the lower number is the median.

INTERNET APPENDIX TABLE V
 MAJOR EXPENSES, CHARGES, AND GENERAL REVENUES:
 PER CAPITA 2018 INFLATION-ADJUSTED DOLLARS

	Mean	Std. Dev.	5th	25th	50th	75th	95th
<i>Expenses</i>							
Public safety	837.70	459.30	395.76	567.75	705.07	934.34	1,757.75
Education	518.58	1,096.09	0.00	0.00	0.00	11.41	2,990.30
Health	445.28	1,192.14	0.00	0.00	93.74	234.58	2,239.26
Utilities	676.40	631.97	97.46	355.56	482.06	709.16	2,302.07
Administration	322.07	320.11	61.84	120.67	203.16	420.34	970.82
Public works	348.35	336.60	0.00	195.51	270.24	371.68	1,124.65
Ports	203.04	355.29	0.00	0.00	50.97	241.20	1,215.63
Total	4,037.82	3,323.59	1,365.14	1,982.16	3,173.73	4,727.93	10,098.18
<i>Charges for services (CFS)</i>							
Public safety	63.82	45.38	8.08	35.72	55.11	79.69	148.85
Education	6.43	14.57	0.00	0.00	0.00	0.00	41.49
Health	46.51	177.26	0.00	0.00	5.87	20.05	141.08
Utilities	697.12	659.65	66.68	366.09	490.51	732.36	2,424.26
Administration	92.08	89.58	4.99	27.52	68.14	131.00	265.07
Public works	90.47	117.98	0.00	23.84	54.62	112.99	273.93
Ports	192.55	326.78	0.00	0.00	39.65	219.08	1,067.79
Total	1,403.86	975.28	454.40	719.38	942.16	2,046.60	3,335.23
<i>General Revenues</i>							
Taxes							
Property	711.54	749.38	79.30	282.43	485.53	718.07	2,580.43
Income	201.31	599.28	0.00	0.00	0.00	0.00	1,155.10
Sales	276.57	391.42	0.00	0.00	204.94	310.65	987.48
Business	1,647.73	1,771.26	570.16	778.03	1,023.46	1,848.07	4,951.45
Total	1,971.19	2,063.13	633.66	918.42	1,138.00	2,144.00	5,504.23
CFS + Taxes	3,051.58	2,151.85	1,169.84	1,668.01	2,393.55	3,698.46	7,306.22
Δ net position	190.05	472.79	-421.01	-23.41	140.10	380.17	828.98

INTERNET APPENDIX TABLE VI
 MAJOR EXPENSES, CHARGES, AND GENERAL REVENUES:
 PER INCOME (%)

	Mean	Std. Dev.	5th	25th	50th	75th	95th
<i>Expenses</i>							
Public safety	1.59	0.67	0.79	1.20	1.43	1.81	3.12
Education	0.93	1.95	0.00	0.00	0.00	0.02	5.52
Health	0.73	1.85	0.00	0.00	0.18	0.50	3.78
Utilities	1.35	1.29	0.22	0.71	1.00	1.32	4.44
Administration	0.60	0.55	0.14	0.24	0.40	0.80	1.84
Public works	0.64	0.46	0.00	0.38	0.54	0.76	1.75
Ports	0.37	0.60	0.00	0.00	0.12	0.50	1.64
Total	7.50	5.08	3.16	4.25	6.12	8.76	17.19
<i>Charges for services (CFS)</i>							
Public safety	0.12	0.08	0.02	0.07	0.11	0.16	0.29
Education	0.01	0.03	0.00	0.00	0.00	0.00	0.08
Health	0.06	0.18	0.00	0.00	0.01	0.04	0.24
Utilities	1.39	1.33	0.14	0.69	1.05	1.48	4.79
Administration	0.18	0.18	0.01	0.05	0.13	0.24	0.60
Public works	0.16	0.16	0.00	0.05	0.11	0.21	0.54
Ports	0.35	0.56	0.00	0.00	0.11	0.47	1.97
Total	2.70	1.71	0.85	1.56	1.96	3.80	5.91
<i>General Revenues</i>							
Taxes							
Property	1.26	1.09	0.19	0.61	0.99	1.41	3.90
Income	0.36	0.98	0.00	0.00	0.00	0.00	2.10
Sales	0.51	0.65	0.00	0.00	0.39	0.61	1.74
Business	2.99	2.63	1.28	1.61	2.07	3.48	8.53
Total	3.61	3.16	1.39	1.90	2.38	4.11	9.18
CFS + Taxes	5.69	3.12	2.49	3.53	4.88	7.23	10.03
Δ net position	0.37	0.92	-0.78	-0.04	0.31	0.76	1.49

INTERNET APPENDIX TABLE VII
 MAJOR EXPENSES, CHARGES, AND GENERAL REVENUES:
 PER TOTAL (%)

	Mean	Std. Dev.	5th	25th	50th	75th	95th
<i>Expenses</i>							
Public safety	24.93	9.18	12.26	17.69	24.62	31.45	41.45
Education	7.17	15.09	0.00	0.00	0.00	0.54	43.04
Health	5.51	7.96	0.00	0.00	3.00	6.35	24.71
Utilities	20.40	14.37	2.10	9.37	20.08	27.30	53.92
Administration	8.12	5.43	2.61	4.85	7.08	9.85	17.63
Public works	9.88	6.48	0.00	5.14	8.33	13.95	21.97
Ports	5.33	7.53	0.00	0.00	2.47	9.57	20.21
Total	100.00	0.00	100.00	100.00	100.00	100.00	100.00
<i>Charges for services (CFS)</i>							
Public safety	6.69	8.55	0.37	2.68	5.09	7.56	12.89
Education	0.82	2.17	0.00	0.00	0.00	0.00	6.58
Health	2.33	4.93	0.00	0.00	0.47	2.24	11.16
Utilities	49.80	23.35	2.39	31.54	54.03	63.92	83.77
Administration	8.18	8.71	0.54	2.57	5.33	10.48	24.16
Public works	7.56	8.12	0.00	2.67	4.72	10.74	20.64
Ports	11.31	15.04	0.00	0.00	3.49	20.60	40.29
Total	100.00	0.00	100.00	100.00	100.00	100.00	100.00
<i>General Revenues</i>							
Taxes							
Property	37.04	18.85	7.85	23.79	37.45	49.83	68.04
Income	5.83	15.03	0.00	0.00	0.00	0.00	30.66
Sales	16.24	15.94	0.00	0.00	16.34	25.21	45.08
Business	84.64	25.70	55.58	79.25	88.73	94.60	98.60
Total	100.00	0.00	100.00	100.00	100.00	100.00	100.00
CFS + Taxes	188.11	94.35	94.48	138.02	173.94	205.68	389.48
Δ net position	12.80	29.89	-27.39	-1.46	10.34	26.30	53.56